Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine provided with a starter, the engine being connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, the engine being automatically shut off when the vehicle is stopped and certain predefined operating states prevail, and automatically started when certain predefined operating states prevail, the method comprising:

adapting a contact point of the clutch when the engine is idling with the vehicle stopped.

Claim 2 (original): The method as recited in claim 1 wherein the automatic shutoff of the engine is delayed for performing a contact point adaptation.

Claim 3 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine provided with a starter, the engine being connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, the engine being automatically shut off when the vehicle is stopped and certain predefined operating states prevail, and automatically started when certain predefined operating states prevail, the method comprising:

adapting a contact point of the clutch with the vehicle creeping at an approximately constant speed, the adapting step including: detecting a first engine torque with the vehicle creeping; disengaging the clutch for a certain time; detecting a second engine torque with the clutch disengaged; and assigning a position of the actuating device with the vehicle creeping to a clutch torque corresponding to a difference between the first and second engine torques.

Claim 4 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine provided with a starter, the engine being connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, the engine being automatically shut off when the vehicle is stopped and certain predefined operating states prevail, and automatically started when certain predefined operating states prevail, the method comprising:

adapting a contact point of the clutch is adapted with the vehicle rolling and the engine idling and the clutch being fully disengaged, the adapting step including: detecting engine torque with the clutch fully disengaged; engaging the clutch until an engine torque increases by a predefined contact torque; and storing a corresponding position of the actuating device as the adapted contact point.

Claim 5 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine provided with a starter, the engine being connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, ~~the engine being automatically shut off when the vehicle is stopped and certain predefined operating states prevail, and automatically started when certain predefined operating states prevail~~, the method comprising:

automatically shutting off the engine when the vehicle is stopped and certain predefined operating conditions prevail;

automatically starting the engine when other certain predefined operating conditions prevail; and

detecting torque transmitted by the clutch during predefined operating phases and adapting a clutch characteristic curve as a function of the detected torque.

Claim 6 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine provided with a starter, the engine being connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, the

engine being automatically shut off when the vehicle is stopped and certain predefined operating states prevail, and automatically started when certain predefined operating states prevail, the method comprising:

detecting changes in a rotational speed of the transmission output shaft as a function of the position of the actuating device with the transmission in neutral;

computing a particular clutch torque as a function of the changes in the rotational speed and the moment of inertia of the input shaft; and

adapting a clutch characteristic curve as a function of the particular clutch torque.

Claim 7 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine provided with a starter, an engine being connected to a transmission via an automated clutch actuated by an actuating device, the output shaft of the transmission driving at least one vehicle wheel, ~~the engine being automatically shut off when the vehicle is stopped and certain predefined operating states prevail, and automatically started when certain predefined operating states prevail,~~ the method comprising:

automatically shutting off the engine when the vehicle is stopped and certain predefined operating conditions prevail;

automatically starting the engine when other certain predefined operating conditions prevail;

determining a zero force point of the clutch by displacing the actuating device from a non-actuated position of the clutch toward a clutch actuation; and

determining a position of the actuating device where a clutch actuation force appears.

Claim 8 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft of the transmission being rotatably connected to a rotor of an electric motor/generator, the method comprising:

adapting a contact point of the clutch with the transmission in neutral and the engine idling, the adapting step including: regulating the motor/generator to a rotational speed different

from an idling speed of the engine; and engaging the clutch until a torque of the engine changes by a predefined contact torque.

Claim 9 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft of the transmission being rotatably connected to a rotor of an electric motor/generator, the method comprising:

adapting a contact point of the clutch with the engine stopped, the adapting step including engaging an initially fully disengaged clutch while the motor/generator is running until a torque of the motor/generator changes by a predefined contact torque.

Claim 10 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft of the transmission being rotatably connected to a rotor of an electric motor/generator, the method comprising:

adapting a contact point of the clutch with the engine stopped, the adapting step including: applying electric power the motor/generator when stopped so that the motor/generator generates a predefined contact torque; and disengaging the clutch until the motor/generator begins to rotate.

Claim 11 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft of the transmission being rotatably connected to a rotor of an electric motor/generator, the method comprising:

adapting a contact point of the clutch with the engine stopped and the motor/generator stopped, the adapting step including: actuating the clutch so the clutch transmits a predefined setpoint contact torque; applying electric power to the motor/generator until the motor/generator begins to rotate; and storing the developed torque as the actual contact torque.

Claim 12 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft of the transmission being rotatably connected to a rotor of an electric motor/generator, the method comprising:

adapting the contact point of the clutch with the engine stopped, the adapting step including: disengaging the clutch is disengaged; operating the motor/generator with a low predefined maximum torque limitation and regulated rotational speed; determining an idling torque of the motor/generator; engaging the clutch until a speed of the motor/generator drops; and assigning the limited maximum torque less the idling torque to a position of the clutch.

Claim 13 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft of the transmission being rotatably connected to a rotor of an electric motor/generator, the method comprising the steps of:

adapting a contact point of the clutch with the engine stopped, the adapting step including: disengaging the clutch; bringing the motor/generator to a certain rotational speed and subsequently runring the motor/generator without power; bringing the clutch to a predefined contact position; detecting a change in the rotational speed of the motor/generator; and computing an actual contact torque of the clutch as a function of a moment of inertia of the motor/generator and a change in the rotational speed.

Claim 14 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft of the transmission being rotatably connected to a rotor of an electric motor/generator, the method comprising:

performing a coefficient of friction adaptation of the clutch, the performing step including generating a predefined torque at the clutch by activating the engine and the motor/generator, and actuating the clutch so that the clutch begins to slip at the predefined torque.

Claim 15 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to a transmission via an automated clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft of the transmission being rotatably connected to a rotor of an electric motor/generator, the method comprising:

carrying out a venting sequence when: the engine is started with the clutch engaged; or the vehicle is operated with engine propulsion and engaged clutch; or when the engine is shut down, the motor/generator is stopped, and the transmission is in neutral; or the vehicle is stopped, a gear is selected, the engine is shut down, and the motor/generator is stopped.

Claim 16 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

activating the engine, the motor/generator, and the second clutch for coefficient of friction adaptation of the first clutch so that a predefined torque is generated on the first clutch, and

actuating the first clutch so that the first clutch is at a slip limit.

Claim 17 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

activating the engine, the motor/generator and the first clutch for coefficient of friction adaptation of the second clutch so that a predefined torque is generated on the second clutch; and

actuating the second clutch so that the second clutch is at a slip limit.

Claim 18 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

venting the first clutch during at least one of the following operating conditions ~~with~~: the engine running; ~~and/or with~~ the engine stopped, ~~and~~ the motor/generator stopped and the transmission in neutral; and ~~and/or with~~ the vehicle stopped, a gear selected, ~~and~~ the engine stopped and the motor/generator stopped.

Claim 19 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

venting the second clutch with the engine running and the second clutch engaged.

Claim 20 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

venting the first clutch before the motor/generator reaches a speed to start the engine.

Claim 21 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second

automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

performing a contact point adaptation of the first clutch by braking the first clutch against the engine, or performing a contact point adaptation of the second clutch by braking the second clutch against a ~~the~~ vehicle brake with a gear selected.

Claim 22 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

performing a contact point adaptation of the first clutch in a drive condition with motor/generator propulsion by periodically actuating the first clutch in a direction of engagement using a small amplitude and detecting a resultant load fluctuation of the motor/generator.

Claim 23 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

performing a contact point adaptation of the first clutch in a drive condition with the vehicle being driven by the motor/generator or in a drive condition with the motor/generator being driven by the vehicle by periodically actuating the first clutch in a direction of engagement using a small amplitude and detecting a resultant load fluctuation of the motor/generator.

Claim 24 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second

automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising:

venting the first clutch in a drive condition with the vehicle being driven by the motor/generator, the vehicle being braked using ~~the~~ brakes, the transmission being put into neutral, and the first clutch being engaged for the venting.

Claim 25 (original): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an input shaft of a transmission via an automated start clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft being connected to the output shaft via an automated load shift clutch and a transmission stage, the method comprising:

adapting a coefficient of friction of the start clutch during a start sequence.

Claim 26 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an input shaft of a transmission via an automated start clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input shaft being connected to the output shaft via an automated load shift clutch and a transmission stage, the method comprising ~~A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an electric motor/generator via a first automated clutch actuated by a first actuating device, the motor/generator being connected to an input shaft of a transmission via a second automated clutch actuated by a second actuating device, an output shaft of the transmission driving at least one vehicle wheel, the method comprising~~:

engaging the load shift clutch during a contact point adaptation of the start clutch.

Claim 27 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to an input shaft of a transmission via an automated start clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, an input

shaft being connected to the output shaft via an automated load shift clutch and a transmission stage, the method comprising:

shifting the transmission during a contact point adaptation of the load shift clutch into neutral and engaging the start clutch.

Claim 28 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to the input shaft of a transmission via an automated start clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, the input shaft being connected to the output shaft via an automated load shift clutch and a transmission stage, the method comprising:

performing a contact point adaptation of the load shift clutch during shifting.

Claim 29 (currently amended): A method for adapting an adjustment of a clutch in an unconventional drive train of a vehicle, the drive train having an internal combustion engine connected to the input shaft of a transmission via an automated start clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, the input shaft being connected to the output shaft via an automated load shift clutch and a transmission stage, the method comprising:

venting the load shift clutch when: a reduction ratio of the transmission is equal to that of the transmission stage and the load shift clutch is engaged; or the reduction ratio of the transmission is not equal to that of the transmission stage, the vehicle is stopped, the engine is running, and the start clutch is disengaged; or the reduction ratio of the transmission is not equal to that of the transmission stage, the vehicle is stopped, and the engine is shut down; or the transmission is in neutral and the start clutch is disengaged.

Claim 30 (currently amended): A method for operating a vehicle having an unconventional drive train, the drive train having an internal combustion engine connected to an input shaft of a transmission via an automated start clutch actuated by an actuating device, an output shaft of the transmission driving at least one vehicle wheel, the input shaft being connected to the output shaft via an automated load shift clutch and a transmission stage, the method comprising:

engaging the load shift clutch with the start clutch disengaged, the engine running, the vehicle stopped, and a reduction ratio of the transmission not being equal to that of the transmission stage; and

gradually disengaging the load shift clutch for start while the start clutch is engaging.